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it may fairly be concluded that the rationale of each is the same, and that they differ only in the amount of action.

February 15, 1844.

SIR J. W. LUBBOCK, Bart., V.P., in the Chair.

“Some further Observations and Experiments illustrative of the Cause of the Ascent and continued Motion of the Sap,” in continuation of a Paper presented to the Royal Society in November 1842. By G. Rainey, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

The author here gives an account of some experiments which he has lately made, tending, in his opinion, to corroborate the opinions he advanced in his former paper; namely, that the ascending sap is situated in the intercellular and intervacular spaces of the plant, and that its passage into the cells is effected by the action of endosmose, which the intervening membranes, whether living, or deprived of vitality, exert upon that fluid. He found that portions of many plants, such as *Anthriscus vulgaris*, and the *Lapsana communis*, absorb a much larger quantity of fluid when they are immersed in pure water, than when similarly immersed in a solution of gum-arabic; and that, in the latter case, the remaining portion of the solution is of the same specific gravity as before any part has been absorbed by the plant. By a similar process, the author conceives, the fluid which is derived from the earth, and has passed into the intercellular spaces of the cotyledons, are imbibed by its cells by endosmose; while at the same time a fluid containing sugar is passing, by exosmose, out of these cells into the intercellular and intervacular tissue, and thence into the corresponding tissue of the peduncle and young stem; it there meets with, and is diluted by the water ascending in the same tissue from the roots, and the mixture is afterwards distributed over every part of the plant.

February 22, 1844.

SIR J. W. LUBBOCK, Bart., V.P., in the Chair.

“On the Temperature of the Springs, Wells and Rivers of India and Egypt, and of the Sea and Table Lands within the Tropics; with a few Remarks on M. Boussingault’s mode of ascertaining the mean temperature of Equinoctial Regions.” By Lieut. Newbold, of the Madras Army, F.R.S.

The author adverts to the deficiency of information which has hitherto existed as to the temperature and chemical composition of the springs and rivers both of India and of Egypt; and also as to their geographical and geological relations. He gives, in the present paper, the details of a great number of observations which he has made on these subjects, and which he thinks may prove a useful contribution to Indian hydrography, as well as afford more exact data for philosophical inquiry. The observations extend, at irregular in-